

CONTAMINANT AND SOURCE	NEUTRALIZATION SITE		TOTALS	N ₂ O	NO _x	SO ₂	N ₂ P ₂ O ₇
Extraction and Neutralization by Alumina-Neutralization Process				16	63	33	
1. Alumina-Neutralization Temperature: 35-40° C. Waste solution added to the carbonate (instead of carbonate to waste) to pre- vent excessive CO ₂ evolution. Carbo- nate make-up tank kept at 35-40° C. to keep carbonate in solution. Temper- ature rise from neutralization not more than 20° C. Agitation while neutraliz- ing sufficient to keep solids suspended Send to large storage tank A (30' x 12').	ALUMINA COATING NEUTRALIZATION	←Alumina Coating Solution ←Sodium Carbonate Solution	9% 108 Gal. 363 33 Gal.	864. 90.5 234. 70.	16. 1.7		
2. Metal Waste Neutralization Same as step (1). Send neutralized slurry to large storage tank A.	METAL WASTE SOLUTION	←Metal Waste Solution ←Sodium Carbonate Solution	7,774 786 Gal. 6,690 786 Gal.	5326. 71. 6090. 70.	44.5 0.6	483. 6.2	
3. First NiPO ₄ By-Product Neutralization Slurry cake out of centrifuge with 50 gallons H ₂ O. Wash centrifuge and lines with 7 gallons of 20% HNO ₃ . Follow with 30 gallons wash water. Neutralize slurry and washes same as step (1) and send to large storage tank B.	FIRST NiPO₄ BY-PRODUCT NEUTRALIZATION	←First NiPO ₄ By-Product Cake ←40% HNO ₃ Wash ←Water Wash ←Sodium Carbonate Solution	105 10 Gal. 100 9 Gal. 500 60 Gal. 220 20 Gal.	76. 72.4 52. 52. 300. 100. 154. 70.			
4. Decontamination Waste Neutralization Neutralize as in step (1). Send to large storage tank B.	DECONTAMINATION WASTE NEUTRALIZATION	←Decontamination Waste Solution ←Sodium Carbonate Solution	11,261 1,264 Gal. 6,440 785 Gal.	9956. 88.5 6040. 70.	598. 5.2	589. 5.2	
5. Second NiPO ₄ By-Product Neutralization Slurry and neutralize as in step (3). Send to large storage tank B.	SECOND NiPO₄ BY-PRODUCT NEUTRALIZATION	←Second NiPO ₄ By-Product Cake ←40% HNO ₃ Wash ←Water Wash ←Sodium Carbonate Solution	105 10 Gal. 100 9 Gal. 500 60 Gal. 220 20 Gal.	76. 72.4 52. 52. 300. 100. 154. 70.			
6. LaF ₃ By-Product Neutralization Slurry and neutralize as in step (3). Send to small storage tank (25'x12') to be stored temporarily. Later to be monitored, diluted and sent to river.	LaF₃ BY-PRODUCT NEUTRALIZATION	←LaF ₃ By-Product Cake ←40% HNO ₃ Wash ←Water Wash ←Sodium Carbonate Solution	83 10 Gal. 100 9 Gal. 500 60 Gal. 220 20 Gal.	80. 96.4 52. 52. 300. 100. 154. 70.			
7. Concentration Waste Neutralization Neutralize as in step (1). Send to small storage tank for temporary storage as in step (6).	CONCENTRATION WASTE SOLUTION	←Concentration Waste Solution ←Sodium Carbonate Solution	13,112 1,528 Gal. 5,880 535 Gal.	12245. 93.4 4120. 70.	506. 3.9	80. 0.6	
8. Room D Waste Neutralization Neutralize as in step (1). Send to small storage tank as in step (6).	ROOM D WASTE NEUTRALIZATION	←Room D Concentration Waste ←Sodium Carbonate Solution	1,046 132 Gal. 506 46 Gal.	983. 94. 354. 70.	41. 3.9	6. 0.6	
Note: Small tanks are 25' x 12'. Large tanks are 30' x 12'.							
→To small storage tanks (2470 gallons per day to temporary storage)							
→To pair B large storage tanks (2400 gallons per day to storage tanks B)							
→To pair A large storage tanks (1746 gallons per day to storage tanks A)							

4

30

GENERAL FILES NUMBER

~~7 hours~~ -
7 hours

43-9-223

9/16/43

This document has been approved for release
to the public by:

David R. Hamm 6/26/95
Technical Information Officer Date
ORNL Site